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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WILSON, DONALD R

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 06/14/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/531,247

Applicant(s)

QIN ET AL.

Examiner

D. R. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-9, 13-16 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-12, 17-19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 28.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Response to Restriction Requirement***

1. Applicant's election with traverse of the inventions of Group I, Claims 1-7, 10-19 and 21, in Papers No. 5 and 7 is acknowledged. The traversal is on the ground(s) that the claims are so interrelated that prosecution of the claims would not unduly burden the Examiner. This is not found persuasive because applicant bases this conclusion on an assertion that the same search is required for all the inventions which is not true. Further, the entire prosecution of the application is to be considered and not just the initial search.
2. The requirement is still deemed proper and is therefore made FINAL. Claims 8-9 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

***Response to Election of Species Requirement***

3. Applicant's election of the species of:
  - a. a cross-linked copolymer of isobutylene and maleic anhydride as the super absorbent material,
  - b. lauryldimethylamine oxide as the surfactant,
  - c. isopropanol as the solvent, and
  - d. fiber as the form of the superabsorbent material

in Paper No. 7 is acknowledged. It is noted that applicant stated both that ethylene maleic anhydride copolymers was the elected specie and that the species are taken from Example 1, which does not contain that specie of superabsorbent material. In a telephone call on 6/11/02, Mr. Theodore Green clarified that they intended the elected specie of super absorbent fiber to be that present in Example 1 (see Interview Summary Record, Paper No. 9). Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

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4. The requirement is still deemed proper and is therefore made FINAL. None of the claims appear to be generic to the elected specie of surfactant lauryldimethylamine oxide, nor is it seen that any exemplified surfactants are within the scope of the instant claims (see rejection under 35 U.S.C. § 112, first paragraph). However, in order to advance prosecution, the claims have been examined on the assumption that generic Claim 1 will be amended to include the elected specie of surfactant. Should the claims not be so amended, they will be withdrawn from consideration. Dependent Claims 7 and 13-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected specie of the invention.

***Claim Rejections - 35 USC § 112, First Paragraph***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. ***Claims 1-6, 10-12, 17-19 and 21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.*** The only suitable surfactant specifically identified by applicant as meeting the requirements for the surfactant, and used in the examples, is lauryldimethyl amine oxide. This surfactant has only one functional group, i.e., the amine oxide group. Yet, applicant recites and claims the process wherein the surfactant contains at least one functional group reactive with a second functional group of the super absorbent material, and at least one non-reactive and hydrophilic functional group. As the lauryldimethyl amine oxide is not within the general description of the suitable surfactant, it does not appear that applicant had possession of the inventions as claimed. It is also not seen in what manner an amine oxide reacts with the isobutylene/maleic anhydride copolymer, although the Examiner acknowledges a showing of beneficial results by having treated fibers of the isobutylene/maleic anhydride copolymer with lauryldimethylamine oxide.

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7. ***Claim 21 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for processes wherein the surfactant is applied to an insoluble material, does not reasonably provide enablement for processes wherein the superabsorbent material is in a solvated state, i.e., is dissolved.*** The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. The specification only teaches how to make permanently wettable super absorbent materials by treating the surfaces of solid materials.

***Claim Rejections - 35 USC § 112, Second Paragraph***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
9. ***Claims 1-6, 10-12, 17-19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***
10. The language of Claim 1 is indefinite for the following reasons:
- a. The metes and bounds of what is included in "*superabsorbent materials*" cannot be determined.

There are two separate requirements set forth in the § 112, second paragraph::  
(A) the claims must set forth the subject matter that applicants regard as their invention; and  
(B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.  
See M.P.E.P. § 2171.
  - b. The only specifically identified suitable surfactant in the specification does not meet the limitations of what is described as the surfactant in Claim 1. Thus, it becomes unclear as to what the surfactants are.
  - c. It is unclear as to in what way and/or for what the surface is "activated".
11. Claim 2 is indefinite because it is unclear as to how much water is an amount sufficient to solvate the surface. While the specification speaks in terms of amounts necessary to cause free rotation of ionic

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groups, it is not seen that this is a readily measurable quantity. An amendment which specifies "an amount sufficient to promote reaction between said first and second functional groups" would overcome the rejection (basis on page 5).

12. Claims 10-12 are indefinite because "*floating time*" and "*a reduction in surface tension of saline less than about 30%*" are indefinite unless saline is defined and the conditions of the test are specified. Further, it would be expected that the results of such a test would be dependent on the form, e.g., film versus fiber, and dimensions of the material e.g., denier of the fiber, none of which is specified.

***Claim Rejections - 35 USC § 102(b)/§ 103(a)***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. ***Claims 1, 4, 6, 10-12, 19 and 21 are rejected under 35 U.S.C. 102(b) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Bashaw.***

17. Bashaw discloses compositions containing a copolymer of maleic anhydride with a suitable comonomer, lightly cross-linked, in fibrous form, treated in an aqueous solution of a suitable surfactant (col. 2, lines 6-16). Isobutylene is one of a limited number of comonomers specifically disclosed (col. 3,

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lines 49-52), and a cross-linked copolymer of maleic anhydride and isobutylene is exemplified in the examples, making such a copolymer readily envisaged. Suitable surfactants include anionic, cationic or non-ionic surface active agents, and cetyldimethyl amine oxide (hexadecyldimethylamine oxide) is one of only three cationic surfactants listed (col. 4, lines 35-68). Thus, the use of cetyldimethylamine oxide as the surfactant would have been readily envisaged. Lauryldimethylamine oxide (dodecyldimethylamine oxide) is a simple homolog of cetyldimethylamine oxide and its use in place of cetyldimethylamine oxide would have been considered to be obvious to one of ordinary skill in the art, with an expectation of equivalent results.

Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH<sub>2</sub>- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

Treatment of the maleic anhydride copolymers is done by immersion in a solution of surfactant (see Example 1). Isolation of the maleic anhydride copolymer by coagulation and dispersion in methanol, and further washing of the product with methanol is taught which would appear to activate the surface of the isolated material (col. 4, lines 10-19). Alternatively, pulverization of the copolymer in an attrition mill to produce a powder, as in Example 1, would also be expected to result in activated surfaces. Preparation of a fiber would necessarily involve coagulation in a solvent, and it would have been obvious to use methanol as it is disclosed as a suitable coagulant. The use of chopped fibers is also disclosed (col. 4, lines 19-20). Subsequent treatment of the compositions in alcoholic solutions is disclosed (col. 2, line 54 to col. 5 line 16), which would be expected to remove fugitive surfactant.

18. **Claims 2-3, 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bashaw as applied to Claims 1, 4, 6, 10-12, 19 and 21 above, and further in view of Schwarz, Jr., as evidenced by the ACS Registry file.**

19. The teachings of Bashaw discussed above are deficient in not disclosing the inclusion of an alcohol in the treatment with the surfactant. However, it is well known to handle surfactants in the form of alcohol solutions in order to facilitate transfer and handling. Indeed, lauryldimethylamine oxide is

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commercially sold as a 40 percent solution in isopropanol as can be seen from the teachings of Schwartz, Jr. (col. 13, lines 35-37). Ammonyx DMCD-40 is the commercial name for this product (see Schwartz, Jr. and ACS Registry File # 1643-20-5. It would have been obvious to one of ordinary skill in the art to use lauryldimethyl amine oxide as an isopropanol solution because that is a form in which it is commercially available.

***Art of Interest/Technological Background***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Otsuji is the US equivalent to EP'494 and discloses compositions such as are instantly claimed. However, neither Otsuji nor EP'494 are available as prior art. Mandell is of interest as it discloses compositions wherein the super absorbent copolymer is treated with the a surfactant, which are the same as the elected species, but are made by a different process. MacLeay, Gross and Eckert disclose processes of treating superabsorbent particles and may be used in future rejections to non-elected species of the invention.

***Future Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. R. Wilson whose telephone number is 703-308-2398.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 703-308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications. The unofficial direct fax phone number to the Examiner's desk is 703-872-9029.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-2351.

D. R. Wilson  
Primary Examiner  
Art Unit 1713



## Interview Summary

Application No.

09/531,247

Applicant(s)

QIN ET AL.

Examiner

D. R. Wilson

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All participants (applicant, applicant's representative, PTO personnel):

(1) D. R. Wilson. (3)\_\_\_\_\_.

(2) Mr. Theodore M. Green. (4)\_\_\_\_\_.

Date of Interview: 11 June 2002.

Type: a)☒ Telephonic b)☐ Video Conference  
c)☐ Personal [copy given to: 1)☐ applicant 2)☒ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: None.

Identification of prior art discussed: None.

Agreement with respect to the claims f)☐ was reached. g)☐ was not reached. h)☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant was called to seek clarification of the elected specie of superabsorbent material. Applicant specified that the material of Example 1, the crosslinked copolymer of maleic anhydride and isobutylene is the elected specie.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i)☒ It is not necessary for applicant to provide a separate record of the substance of the interview(if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form or in an attachment to the Form, the examiner should check the appropriate box at the bottom of the Form which informs the applicant that the submission of a separate record of the substance of the interview as a supplement to the Form is not required.

It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.